

Flowers: July - November.
 Distribution: Katraj, Konkan (J.D. Hooker).
 Endemic to India.

Blumea DC. (nom. cons.)

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|--|---|
| 1. Plants densely white woolly | 2 |
| 2. Leaves not spiny toothed; corollas of bisexual florets only hairy on the lobes | 3 |
| 3. Outer phyllaries linear and tapering | 4 |
| 4. Plants glandular villous; leaves not lyrate | <u>B. lacera</u> |
| 4. Plants densely glandular pubescent; leaves often lyrate | <u>B. lacera</u> var. <u>glandulosa</u> |
| 3. Outer phyllaries oblong-lanceolate, acute | 5 |
| 5. Stems unbranched; capitula in sessile clusters | <u>B. hieraciifolia</u> var. <u>hieraciifolia</u> |
| 5. Stems branched at the apex; capitula in pedunculate clusters | <u>B. hieraciifolia</u> var. <u>evaluator</u> |
| 2. Leaves spiny toothed; corollas of bisexual florets hairy on tubes as well as the lobes | <u>B. lanuginosa</u> |
| 1. Plants glabrate or variously pubescent, never woolly all over | 6 |
| 6. Phyllaries at least the outer, oblong-ovate to oblong-lanceolate | 7 |
| 7. Leaves glabrate on the upper surface | 8 |
| 8. Capitula 6-8 mm in diameter, subsessile and clustered | <u>B. lanceolaria</u> |
| 8. Capitula 9-11 mm in diameter, distinctly pedunculate | <u>B. lanceolaria</u> var. <u>spectabilis</u> |
| 7. Leaves variously pubescent on the upper surface | <u>B. hirsuta</u> |
| 6. Phyllaries all linear or linear-lanceolate | 9 |
| 9. Pappus reddish | <u>B. balsamifera</u> |
| 9. Pappus white | 10 |
| 10. Corolla lobes of bisexual florets with multicellular hairs in addition to collectors | 11 |
| 11. Leaves remotely denticulate | <u>B. bovei</u> |
| 11. Leaves serrate-dentate | 12 |
| 12. Lower leaves elliptic-lanceolate, sessile | <u>B. obliqua</u> |
| 12. Lower leaves spatulate | <u>B. venkataramanii</u> |
| 10. Corolla lobes of bisexual florets glabrous or with unicellular hairs in addition to collectors | 13 |
| 13. Cauline leaves narrowly linear-lanceolate to oblong-lanceolate | <u>B. tenella</u> |
| 13. Cauline leaves never linear-lanceolate or narrow | 14 |
| 14. Capitula solitary, axillary and terminal | <u>B. bifoliata</u> |
| 14. Capitula glomerulate or variously paniculate | 15 |
| 15. Capitula glomerulate, the clusters interruptedly spicate | 16 |
| 16. Receptacle pilose; leaves not lobed | <u>B. fistulosa</u> |
| 16. Receptacle glabrous; leaves lyrate lobed | <u>B. sessiliflora</u> |
| 15. Capitula paniculate | 17 |
| 17. Leaves spinous-toothed; corollas of both types of florets hairy | 18 |
| 18. Anthers well-developed; heads in sessile axillary clusters | <u>B. belangeriana</u> |
| 18. Anthers abortive; heads in pedunculate clusters | 19 |
| 19. Plants erect; corolla tubes as well as the lobes hairy | <u>B. eriantha</u> |
| 19. Plants prostrate; only the corolla lobes hairy | <u>B. oxyodonta</u> |
| 17. Leaves not spinous-toothed; corollas of female florets, at least, glabrous | 20 |
| 20. Receptacle minutely pilose | <u>B. sinuata</u> |
| 20. Receptacle glabrous | 21 |
| 21. Achenes ribbed | 22 |
| 22. Plants more or less glabrous | <u>B. laevis</u> |
| 22. Plants pubescent or variously glandular | 23 |
| 23. Heads 5-7 mm in diameter; phyllaries herbaceous; plants pilose and slender | 24 |
| 24. Plants glandular hairy | <u>B. paniculata</u> var. <u>muralis</u> |
| 24. Plants not glandular hairy | 25 |
| 25. Receptacle hairy | <u>B. paniculata</u> var. <u>paniculata</u> |
| 25. Receptacle glabrous | <u>B. paniculata</u> var. <u>gracilis</u> |
| 23. Heads 7-8 mm in diameter; phyllaries rigid; plants strigose and | |

robust

B. paniculata var. jaquemontii

21. Achenes sub-angular or terete

26

26. Leaves usually not lobed; corolla purple to lilac B. solidaginoides

26. Leaves lyrate lobed; corolla yellow B. lacera

Blumea balsamifera (L.) DC., Prodr. 5: 466, 1836; Clarke, Comp. Ind. 89, 1876; Hook. f., Fl. Brit. Ind. 3:270, 1881; Randeria, Blumea 10(1): 237, 1960; Graham, Cat. Bombay Pl. 97, 1839; Voight, Hort. Suburb. Cal. 410, 1845.

Conyza balsamifera Linn., Sp. Pl. ed. 2: 1208, 1763.

Pluchea balsamifera Less. in Linnaea 6: 150, 1831.

Baccharis salvia Lour., Fl. Cochinchin. 494, 1790.

An arboreous herb, tomentose or silky woolly. Leaves 10-20 cm long, elliptic or oblong-lanceolate, usually silky on dorsal surface, serrate, sometimes pinnatifid, narrowed into an auricled petiole. Heads 6-8 mm across, sessile or peduncled in globose bracts, tomentose. Receptacle glabrous. Achenes 10-ribbed, silky. Pappus red.

Whole plant sometimes smelling of camphor.

Flowers: September - November.

Distribution: Amboli (S.M. Almeida - 2822, BLAT).

Distributed in India, Java, Cochinchina and Cazon.

Blumea belangeriana DC., Prodr. 5: 444, 1825; Hook. f., Fl. Brit. Ind. 3:266, 1881; Cooke, Fl. Pres. Bombay 2:22, 1904; Randeria, Blumea 10(1): 277, 1960; Malhotra & Moorthy, BOBSI 13: 304, 1971; Almeida, Fl. savantwadi 221, 1990; Kulkarni, Fl. Sindhudurg Dist. 218, 1988; Naik, Fl. Marathwada 458, 1998; Bole & Almeida, JBNHS 79: 597, 1983.

Blumea metziana Sch.-Bip. ex Hook. f., Fl. Brit. Ind. 3:266, 1882.

Herbaceous; stem erect, terete, much branched from and sparingly hispid at the base, softly villous at the apex, the stem and branches usually red-brown. Lower leaves 5-8 by 2.5-4 cm, obovate, attenuated into a short petiole, the upper leaves subsessile, elliptic oblong, all closely dentate, sparsely hairy above, densely sericeo-villous beneath. Heads 8 mm in diam., axillary, sessile, solitary or clustered. Corolla lobes of flowers hairy. Receptacle glabrous. Involucre bracts linear, woolly. Achenes terete, nearly glabrous.

Flowers: April - May (December).

Distribution: Mumbra!, Goregaon!, Khandala!, Pune!, Matheran!, Borivali!, Uran!, Tungar!, Kanheri (M.R. Almeida - 164, BNHS!), Bhedsil, Tilaril, Kudal, Chapheli, Hewale, Vengurlal, Mahabaleshwar!, Sativalil, Parol!, Rajgad!.

Vidarbha: Keslaghat, Mercacasa, Kattajhari (Muramgaon).

Marathwada: Kinwat, Phugadigutta.

Blumea bifoliata (Linn.) DC. in Wight, Contr. 14, 1834; Clarke, Comp. Ind. 72, 1876; Dalz. & Gibs., Bombay Fl. 125, 1861; Hook. f., Fl. Brit. Ind. 3:261, 1881; Cooke, Fl. Pres. Bombay 2: 19, 1904; Randeria, Blumea 10: 288, 1960; Naik, Fl. Marathwada 458, 1998; Ugemuge, Fl. Nagpur Dist. 203, 1986; Voight, Hort. Suburb. Cal. 110, 1845.

Conyza bifoliata Linn., Sp. Pl. ed. 2: 1207, 1753; Roxb., Fl. Ind. 5: 430, 1832.

Stem terete, branched from the base, erect or decumbent, more or less hairy. Leaves 2.5-8 by 1-3 cm, elliptic or oblong, acute, sessile, slightly serrate, pubescent or pilose on both sides, the uppermost pair of leaves subopposite. Heads 6-8 mm in diam., solitary; flowers yellow; peduncles rather long. Corolla lobes of flowers hairy. Involucre bracts hairy, linear, acute, the interior not caudate. Receptacle glabrous. Pappus white. Achenes narrowly oblong, with 4-5 slightly hairy angles.

Flowers: November - February.

Distribution: Peninsular India (Voight).

Vidarbha: Nagpur, Buttibori, Maharajbag!.

Marathwada: Osmanabad, Sahasrakund, Parbhani town.

Blumea bovei (DC.) Vatke in Linnaea 39: 485, 1875; Raghavan, Wadhwa & Ansari in Rec. Bot. Surv. Ind. 21(2): 43, 1981.

Conyza bovei DC. in Ann. Sci. Nat. Bot. 261, 1834.

B. abyssinica Schult. in Rich., Tent. Fl. Abyss. 1: 392, 1847.

A herb 25-40 cm tall. Root-stock woody. Stem ascending, terete. Leaves sessile, 1.5-8 cm long and 0.2-0.8 cm broad, linear-oblong or lanceolate-oblong, sparsely pubescent, apex apiculate, margins denticulate, base auriculate with rounded lobes. Heads axillary and terminal, solitary or in corymbs. Phyllaries purplish, equal in length with florets, 2-6 mm long, tapering at the apex, pubescent. Corolla yellow, tubular, those of bisexual florets 3-4 mm long, with 5-ovate, acute, papillate lobes, with hairs; those of female florets 3 mm long, 2-3 lobed. Anthers tailed. Achenes dark-brown, oblong, pubescent. Pappus white, 3-4 mm long.

Flowers: October - April.

Distribution: Mumbra.

Blumea eriantha DC. In Wight, Contrib. 15: 1834; Hook. f., Fl. Brit. Ind. 3: 266, 1881; Woodrow in JBNHS 11: 648, 1897; Cooke, Fl. Pres. Bombay 2: 22, 1904; Randena, Blumea 10(1): 279, 1960; Malhotra & Rao, BOBSI 22: 7, 1980; Kamble & Pradhan, Fl. Akola 113, 1988; Almeida, Fl. Savantwadi 221, 1990; Kulkarni, Fl. Sindhudurg Dist. 218, 1988; Naik, Fl. Marathwada 459, 1998; Bole & Almeida, JBNHS 79: 597, 1983; Karthikeyan & Anandkumar, Fl. Yavatmal Dist. 135, 1993; Ugemuge, Fl. Nagpur Dist. 204, 1986.

Nimurdi.

"Manja-adeca-manjen" Rheede, Hort. Mal. 10: 33, t. 17, 1690.

Herbaceous; stem erect, terete, slender, 30-45 cm high, more or less pubescent, dichotomously branched. Leaves 2.5-8 by 1-4 cm, irregularly apicately toothed, the teeth sometimes alternately long and short especially in the upper leaves, the lower leaves petioled, obovate, subobtusate, the upper sessile or nearly so, elliptic-oblong, acute, all pubescent or sometimes silky-villous. Heads 6-8 mm in diam., on the long slender silky hairy peduncles of dichotomous cymes. Corolla-lobes of flowers hairy. Receptacle glabrous. Involucre bracts linear, clothed with long silky hairs. Achenes minute, angled, with a few hairs on the angles.

Flowers: December - March.

Distribution: Kasaraj, Borivali, Tungar, Khandala, Uran, Igatpuri, Karjat, Goregaon, Khedi, Matunga, Sion, Mahabaleshwar, Purandhar, Malkapur, Malad, Badlapur, Amboli.

(M.R. Almeida - 2125, BNHS), Tilar (M.R. Almeida - 2199, ALC), Thane (M.R. Almeida - 173, BNHS), Kudal-Ghotge, paroli, Sivansai, Elephanta, Peni.

Vidarbha: Chikhwal, Mahan, Nawegaon, Mukutban, Starky point, Nagpur.

Marathwada: Sitakhandi, Kinwat, Nanded.

Blumea fistulosa (Roxb.) Kurtz in Journ. Asiat. Soc. Bengal 46(2): 187, 1877; Randena, Blumea 10: 256, 1960; Naik, Fl. Marathwada 459, 1998; Bole & Almeida, JBNHS 79: 597, 1983; Ugemuge, Fl. Nagpur Dist. 204, 1986.

Conyza fistulosa Roxb., Fl. Ind. 3: 429, 1832.

B. glomerata DC. in Wight, Contr. Bot. Ind. 15, 1834; Dalz. & Gibs., Bombay Fl. 125, 1861; Hook. f., Fl. Brit. Ind. 125, 1861; Hook. f., Fl. Brit. Ind. 3: 262, 1881 (Excl. syn. *B. fasciculata* DC.).

B. nodiflora Hook. f., Fl. Brit. Ind. 3: 262, 1881; Birdwood, JBNHS 16, 1897; Cooke, Fl. Pres. Bombay 2: 20, 1904.

B. holosericea Dalz. & Gibs., Bombay Fl. 125, 1861 (non DC., 1834).

B. leptoclada Dalz. & Gibs., Bombay Fl. 126, 1861.

Bhambhurda.

Pubescent or villous; stem herbaceous, erect, 0.3-1.2 m high, ashy-pubescent especially in the upper part. Lower leaves petioled, obovate, often lyrate-pinnatifid, 10-12 cm long, coarsely serrate or sometimes entire; the upper leaves much smaller, sessile, oblong, inciso-serrate, all more or less hairy or pubescent on both sides. Heads 6 mm in diam., in sessile fascicles along the branches often forming interrupted spikes; flowers yellow. Corolla lobes pubescent. Receptacle pubescent. Involucre bracts ashy-pubescent, the outer very small, the inner large, exceeding the flowers, very often purple. Achenes ribbed, sparingly hairy.

Flowers: December - February.

Distribution: Bombay, Mahabaleshwar.

Marathwada: Sitakhandi (Nanded).

Vidarbha: Deolapur.

Blumea hieracifolia (D. Don) DC. in Wight, Contr. Bot. Ind. 15, 1834; Randena, Blumea 10: 246, 1960.

Erigeron hieracifolium D. Don. Prodr. 272, 1825.

B. auriculata Wall. ex DC., Prodr. 5: 442, 1836.

B. sericans Hook. f., Fl. Brit. Ind. 3:262, 1881.

Plants large, silky-sericeous. Stem erect, unbranched. Leaves irregularly serrate-dentate, at least few cauline. Heads in sessile clusters. Corolla of bisexual florets with colletes only, hairs absent. Phyllaries usually purple tipped.

Flowers.

Distribution: Bombay (Randeria).

Blumea hieracifolia (D. Don) DC. var. *evolutor* Clarke, Comp. Ind. 82, 1876.

B. hieracifolia DC. var. *macrostachya* (DC.) Hook. f., Fl. Brit. Ind. 3:263, 1881; Randeria,

Blumea 10(1): 248, 1960.

B. macrostachya DC., Prodr. 5: 442, 1836.

A tall robust herb, much branched above. Leaves mostly cauline with spreading hairs beneath. Heads in large clusters at the ends of the branches. Phyllaries purple-tipped.

Flowers: April.

Distribution: Mahabaleshwar!

Blumea hirsuta (Less.) Almeida (comb. nov.).

Blumea clarkei Hook. f., Fl. Brit. Ind. 3:267, 1881; Randeria in *Blumea* 10: 252, 1960.

B. malabarica Hook. f., Fl. Brit. Ind. 3:267, 1881; Woodrow in JBNHS 11: 648, 1897; Cooke,

Fl. Pres. Bombay 2: 23, 1904.

Pluchea hirsuta Less., Linnaea 6: 150, 1831.

More or less pubescent, 1 m high, stem and branches terete, grooved. Leaves membranous, fragrant when bruised, subsessile, 4-13 by 2.5-1 cm, lanceolate-oblong, acute, distantly serrate, more or less pubescent on both surfaces though often nearly glabrous above, base acute, petioles short, distinct, not merely formed of the narrowed bases of the leaves. Heads pubescent, 1 cm in diam., in small axillary sessile or peduncled clusters. Receptacle broad, pubescent. Involucre bracts linear, acute, pubescent, the outer much shorter than the inner. Achenes 1-2 mm long, ribbed, with a few scattered hairs, chiefly towards the apex.

Flowers: November - February.

Distribution: Konkan.

Blumea lacera (Burm. f.) DC. in Wight, Contrib. 14, 1834 & in Prodr. 5: 436, 1825; Graham, Cat. Bombay Pl. 97, 1839; Hook. f., Fl. Brit. Ind. 3:263, 1881; Woodrow in JBNHS 11: 648, 1897; Cooke, Fl. Pres. Bombay 2: 20, 1904; Randeria, *Blumea* 10: 264, 1960; Malhotra & Moorthy, BOBSI 13: 304, 1971; Almeida, Fl. Savantwadi 221, 1990; Kulkarni, Fl. Sindhudurg Dist. 218, 1988; Naik, Fl. Marathwada 460, 1998; Bole & Almeida, JBNHS 79: 598, 1983; Karthikeyan & Anandkumar, Fl. Yavatmal Dist. 136, 1993; Voight, Hort. Suburb. Cal. 410, 1845.

Conyza lacera Burm. f., Fl. Ind. 180, t. 59, f. 1, 1768; Roxb., Fl. Ind. 3:428, 1832.

Conyza axillaris Lamk., Encyclop. 2: 84, 1786.

Conyza thyrsoides Pers., Syn. 2: 426, 1806.

Blumea lacera (Burm. f.) DC. var. *burmanii* DC., Prodr. 5: 436, 1836.

Blumea leptoclada Dalz. & Gibs., Bombay Fl. 125, 1861 (non DC., 1836).

Blumea subcapitata DC., Prodr. 5: 439, 1836; Hook. f., Fl. Brit. Ind. 3: 261, 1881.

Burando.

Annual, with a strong odour of turpentine; stem erect, 0.3-1 m high, ash-colored, usually densely glandular-pubescent. Leaves 4-12 by 2-4 cm, the lower petioled, often incised or lyrate, the upper subsessile, elliptic-oblong or obovate, obtuse or subacute, finely silky-pubescent on both sides, sharply serrate-dentate, base much tapered. Heads 6-8 mm in diam., numerous, in short axillary cymes and terminal spiciform panicles, flowers yellow. Corolla lobes nearly glabrous. Involucre bracts densely silky villous, the outer bracts somewhat herbaceous, linear-lanceolate, the inner linear, scarious with a green midrib. Receptacle glabrous. Pappus white. Achenes not ribbed, small, oblong, sub-4-gonous. Distinguishable when living from *B. wightiana* by its yellow flowers and by its odour.

Flowers: December - March.

Distribution: Andheri!, Uran!, Mumbra!, Malgaon!, Savantwadi (M.R. Almeida -4698, BNHS), Amboli!, Phonda, Kankauli, Sangwe, Kudal, Pulas, Kerude, Peninsular India (Voight), Pen!, Kothrud!.

Vidarbha: Nagpur, Lakkadkote, Umarkhed.

Marathwada: Kinwat, Harsool, Sautada.
Distributed in India, Silhet and Java.

Blumea lacera var. **glandulosa** Hook. f., Fl. Brit. Ind. 3:263, 1881; Naik, Fl. Marathwada 461, 1998.
B. glandulosa DC in Wight, Contrib. 14, 1834.

Whole plant more or less glandular hairy.
Flowers: January - February.
Distribution: Marathwada : Osmanabad, Simphal.

Blumea laevis (Lour.) Merrill, Trans. Amer. Phil. Soc. 24:386, 1935; Almeida, Fl. Savantwadi 222, 1990.

Placus laevis Lour., Fl. Cochinch. 497, 1790.

Blumea virens DC., Wight, Contr. 14, 1834; Clarke, Comp. Ind. 79 (pro parte); Hook. f., Fl. Brit. Ind. 3: 264, 1881; Woodrow in JBNHS 11: 648, 1898; Cooke, Fl. Pres. Bombay 1: 1903; Randeria, Blumea 10: 272, 1960; Kamble & Pradhan, Fl. Akola 115, 1988; Kulkarni, Fl. Sindhudurg Dist. 220, 1988; Naik, Fl. Marathwada 466, 1998; Bole & Almeida, JBNHS 79: 598, 1983; Ugemuge, Fl. Nagpur Dist. 206, 1986.

Erect, slender, 0.3-1 m high, much branched, glabrous, stem grooved, glabrous. Lower leaves sometimes reaching 12-13 cm long, petioled obovate or often lyrate or runcinate, irregularly sinuate-toothed, the upper leaves much smaller, elliptic-oblong, serrate, all glabrous or nearly so. Heads 6 mm in diam., glabrous, on capillary glabrous peduncles, in open much branched panicles with small leaves on the ascending branches, flowers yellow. Corolla-lobes of flowers glabrous or glandular. Involucre bracts slender, almost glabrous, the outer very much smaller than the inner, linear-lanceolate, acute, spreading, the inner bracts linear, subacute, pubescent at the tips. Anthers all fertile. Receptacle glabrous. Pappus shorter than the inner bracts. Achenes about 1/30" long, oblong, hairy, ribbed.

Flowers: June-January (December - May)

Distribution: Konkan (BNHS & 35632-BLAT), SMA -13, 224, 1145, Amboli (M R Almeida -1139, BNHS! & 980 BNHS!), Kudal, Sivapur, Gavata, Ramghat!, Charatha!.

Marathwada: Kannad ghat, Beed, Nanded, Ambajogaie.

Vidarbha: Narnala Fort (Akola), Ramtek.

Blumea lanceolaria (Roxb.) Druce, Rep. Bot. Exch. Club Brit. Isles 4: 609, 1917, Randeria, Blumea 10 (1): 218, 1960.

Garteria setosa Lour., Fl. Cochinch. 507, 1790. (non Linn.)

Garteria loureiriana DC., Prodr. 6: 501, 1837.

Blumea spectabilis DC. var. **longifolia** Clarke in Hook. f., Fl. Brit. Ind. 3:269, 1881.

B. longifolia DC., Prodr. 5: 446, 1836; Dalz. & Gibs., Bombay Fl. 125, 1861.

Conyza lanceolaria Roxb., Fl. Ind. 3: 432, 1832.

Blumea myriocephala DC., Prodr. 5: 445, 1836; Thw., Enum. Fl. Zeyl. 163, 1860.

An undershrub 0.6-2 m tall. Stem hollow in the centre. Leaves 6-30 cm long and 0.8-8 cm broad, elliptic-oblongate or oblong, lanceolate, glabrous, apex shortly acuminate, margins serrate-terete, base tapering. Heads in terminal panicles, 6-10 mm in diam. Phyllaries green to purplish, longer than florets, 9 mm long, outer ovate-lanceolate, inner narrowly lanceolate, with ciliate margins. Corolla yellow, tubular; those of bisexual florets 5-6 mm long, ovate, acute; those of female florets 5-6 mm long, filiform, 2-3 lobed. Anthers tailed. Achenes straw colored, oblong, ribbed. Pappus yellowish-white.

Flowers: December - March.

Distribution: Bombay (Fernandez, 168, GH), Tallaware (Dalzell), Purandhar!, Mahabaleshwar!.

Heads in this species is only half the size than that of **Blumea lanceolaria** var. **spectabilis** (DC.) Randeria..

Blumea lanceolaria (Roxb.) Druce var. **spectabilis** (DC.) Randeria, Blumea 10: 220, 1960; Bole & Almeida, JBNHS 79: 598, 1983.

B. spectabilis DC., Prodr. 5: 445, 1836; Trimen, Fl. Ceylon, 3: 22, 1900; Hook. f., Fl. Brit. Ind. 3: 269, 1881; Cooke, Fl. Pres. Bombay 2: 23, 1903.

B. myriocephala Woodrow in JBNHS 11: 648, 1897 (non DC., 1836); Dalz. & Gibs., Bombay

Fl. 125, 1861.

B. wallichii Clarke, Comp. Ind. 87, 1876.

Shrubby. 1-2 m high; stem stout, glabrous or puberulous. Leaves 15-25 by 4-6 cm, lanceolate or oblanceolate, acute, shallowly serrate, glabrous on both sides, much tapering at the base into a long winged petiole which is often furnished with 2-3 small divaricate appendages. Heads 6-12 mm in diam., on pubescent peduncles, very numerous, forming a large pyramidal lax panicle with narrow leafy bracts beneath the branches; flowers yellow. Corolla lobes of flowers glandular. Involucre bracts slender, pubescent, the outer rows short and slightly spreading. Pappus at first tawny, ultimately red. Achenes silky, scarcely ribbed.

Flowers: January.

Distribution: Mahabaleshwar (L.J. Sedgwick, BLAT), Purandhar!, Amboli.

Blumea lanuginosa (Clarke) Cooke ex Almeida (comb. nov. adopt.)

Blumea malcolmii Hook. f., Fl. Brit. Ind. 3: 266, 1881; Woodrow in JBNHS 11: 648, 1897; Randeria, *Blumea* 10: 278, 1960; Cooke, Fl. Pres. Bombay 2: 23, 1904; Almeida, Fl. Savantwadi 222, 1990; Kulkarni, Fl. Sindhudurg Dist. 219, 1988; Naik, Fl. Marathwada 461, 1998; Puri & Mahajan, BOBSI 3: 125, 1962; Bole & Almeida, JBNHS 79: 598, 1983.

Pluchea malcolmii Clarke, Comp. Ind. 95, 1876.

Blumea lanuginosa Law. ex Cooke, Fl. Pres. Bombay 2: 23, 1904 (as a synonym).

Pluchea lanuginosa Clarke, Comp. Ind. 95, 1876; Hook. f., Fl. Brit. Ind. 3: 266, 1881.

A rather stout plant, densely clothed with silky white wool, stem leafy, usually ascending, but sometimes decumbent and branched from the root as in *B. oxyodonta*. Leaves 2.5-12 by 1-6 cm, sessile, rather thick, obovate, obtuse, acutely and closely irregularly toothed (the margins of the larger leaves sometimes crenate, the crenatures closely set with small spinous teeth), densely clothed with white silky wool, base tapering. Heads 1-2 cm in diam., in leafy panicles at the ends of the stem or branches, all woolly with long white silky hairs. Corolla yellow, lobes hairy. Involucre bracts linear, acute, densely clothed with long white silky hairs, the outer bracts smaller. Achenes obscurely angled, silky. The buds at the crown of the root form globose woolly bodies often clustered together.

Flowers: November - February.

Distribution: Purandhar!, Mahabaleshwar!, Igatpur!, Lohagad!, Amboli (M.R. Almeida - 888, BLAT), Kalsubai, Panchganil, Toranmall!, Purandhar (M.R. Almeida - 2376, BNHS), Kankauli, Nardave, Ramghat, Khandesh, Toranmall!.

Clarke (1876) published *Pluchea malcolmii* & *P. lanuginosa*, in Flora of British India. J.D. Hooker on advice of Clarke accepts *P. lanuginosa* Clarke as a synonym for his *Blumea malcolmii* Hook. f. without citing Clarke's *Pluchea malcolmii* Clarke. It appears that Hooker did not make a new combination on Clarke's *Pluchea malcolmii*, but proposed a new name for Malcolm's specimen. Therefore, the name *Blumea malcolmii* Hook. f. should be considered as a new name originating from 1881 and should not be considered as a new combination based on *Pluchea malcolmii* Clarke (1836). It appears that the correct specific epithet for this taxon available on the basis of priority is *lanuginosa* from *Pluchea lanuginosa* *Blumea lanuginosa* Law in manuscript in Kew Herbarium as well as in Cooke's Flora of Bombay Presidency is not validly published and has no status under rules of ICBN and is available for new combination for this taxon. Therefore, a new combination *Blumea lanuginosa* (Clarke) Cooke ex Almeida (comb. nov.) is proposed as the correct name for this species.

Blumea obliqua (Linn.) Druce, Rep. Bot. Exch. Club. Brit. Isles 4: 609, 1916; Randeria, *Blumea* 10: 286, 1960; Malhotra & Rao, BOBSI 22: 7, 1980; Malhotra & Moorthy, BOBSI 13: 304m 1971; Kamble & Pradhan, Fl. Akola 114, 1988; Naik, Fl. Marathwada 464, 1998; Ugemuge, Fl. Nagpur Dist. 205, 1986.

Erigeron obliquum Linn., Mant. 2: 573, 1771; DC., Wight Contr. Bot. Ind. 13, 1834;

B. amplexans DC. in Wight, Contr. Bot. Ind. 13, 1834; G. L. Shah, BOBSI 4: 239, 1962; Dalz. & Gibs. Bombay Fl. 125, 1861; Hook. f., Fl. Brit. Ind. 3: 260, 1881; Woodrow in JBNHS 11: 648, 1897; Cooke, Fl. Pres. Bombay 1: 19, 1904.

B. amplexans DC. var. *arenaria* (DC.) Hook. f., Fl. Brit. Ind. 3: 260, 1881.

B. amplexans DC. var. *pubiflora* (DC.) Hook. f., Fl. Brit. Ind. 3: 260, 1881.

Conyza amplexicaulis Lamk., Dict. 2: 85, 1786.

Conyza obliqua Willd., Sp. Pl. 3: 1930, 1797.

Blumea pubiflora DC., Prodr. 5: 434, 1836.

Annual, 25-35 cm high; stems terete, divaricately branched, more or less hairy. Leaves 2-5 by 0.6-2 cm, sessile, elliptic-oblong, acute, the young leaves villous, the older nearly glabrous, auricled at the base, 1/2 amplexicaul, regularly and sharply toothed, the upper teeth the smaller. Heads small, 6-8 mm in diam., solitary, few, terminal; flowers yellow; peduncles hairy, often longer than the leaves. Corolla-lobes hairy. Involucre bracts linear-subulate, densely pubescent, the inner row tipped with a long white bristle. Receptacle glabrous. Pappus pink. Achenes minute, less than 1 mm long, oblong, compressed, microscopically hairy.

Flowers: December-March.

Distribution: Nagothanel, Pen!, Sholapur!

Marathwada: Osmanabad, Kinwat.

Vidarbha: Akot, Patur, Karla, Kanhargaoon in Chandrapur, Institute of Science Campus, Koradi.

There is one specimen of this in BLAT, identified as *B. amplexens* var. *maritima*, collected by G. M. Woodrow from Bombay salt swamps.

Blumea obliqua (Linn.) Druce var. ***tenella*** (Clarke) Maheshwari, JBNHS 54: 805, 1956.

B. amplexens DC. var. *tenella* Hook. f., Fl. Brit. Ind. 3: 260, 1881 (non *B. tenella* DC., 1836); Cooke, Fl. Pres. Bombay 2: 19, 1904.

Nearly glabrous. Scarcely separable as a variety.

Flowers: December - May.

Distribution: Nagothanel, Pen!, Sholapur!, Khandala (Stocks).

Marathwada: Osmanabad, Kinwat.

Vidarbha: Akot, Patur, Karla, Kanhargaoon in Chandrapur.

Blumea oxyodonta DC. in Wight Contr. 15, 1834; Clarke, Comp. Ind. 85, 1876; Hook. f., Fl. Brit. Ind. 3: 266, 1881; Woodrow in JBNHS 11: 648, 1897; Cooke, Fl. Pres. Bombay 2: 21, 1904; Randeria, *Blumea* 10(1) 280, 1960; Malhotra & Moorthy, BOBSI 13: 304, 1971; Santapau, Fl. Khandala ed. 3, 128, 1967; Almeida, Fl. Savantwadi 222, 1990; Kulkarni, Fl. Sindhudurg Dist. 219, 1988; Naik, Fl. Marathwada 464, 1998; Puri & Mahajan, BOBSI 3: 125, 1962; Bole & Almeida, JBNHS 79: 598, 1983; Ugemuge, Fl. Nagpur Dist. 206, 1986. (Fig. 29, Pl. 16).

Blumea bovina (Buch.-Ham. ex DC.) Edgew., Journ. Asiat. Soc. Bengal 21: 173, 1853.

Conyza bovina Buch.-Ham. ex DC. Prodr. 5: 444, 1836.

Erigeron cuspidatus Spr. ex DC., Prodr. 5: 444, 1836.

Herbaceous, prostrate or decumbent, branched from the base; branches slender, leafy, 8-25 cm long, simple or dichotomously forked, pubescent or glabrous, the young ones often serico-canescens. Leaves membranous, spinous-toothed, those near the base of the stem reaching sometimes 10-12 by 4-6 cm, obovate-oblong or elliptic-oblong, petioled, upper stem-leaves much smaller, 1-4 by 0.6-2 cm, subsessile, obovate or elliptic, pubescent on both sides, the young ones often serico-villous. Heads 6 mm in diam., solitary or corymbose, on slender peduncles; flowers yellow. Corolla-lobes of flowers glabrous. Involucre bracts linear, acute, more or less densely pubescent. Receptacle glabrous. Achenes slightly hairy.

Flowers: December - March.

Distribution: Karjat!, Borivali!, Ratnagiri!, Malad!, Mumbra!, Tungar!, Khandala!, Matheran!, Goregaon!, Bhimashankar (M.R. Almeida -2414, BNHS), Koinanagar (M.R. Almeida -1331, BNHS), Savantwadi (M.R. Almeida -1019, BNHS), Amboli!, Savantwadi!, Kudal, Akeri, Tervan, Vengurla!, Ramghat!.

Marathwada: Osmanabad, Mahur, Sitakhandi.

Vidarbha: Maseli, Khatoda (Tadoba), Starky point, Nagpur!.

Blumea paniculata (Willd.) Almeida (comb. nov.)

Conyza paniculata Willd., Sp. Pl. 3: 1920, 1804.

B. membranacea DC., Prodr. 5: 440, 1836; Hook. f., Fl. Brit. Ind. 3: 265, 1881; Woodrow in JBNHS 11: 648, 1897; Cooke, Fl. Pres. Bombay 2: 21, 1904; Randeria, *Blumea* 10: 270, 1960; Malhotra & Moorthy, BOBSI 13: 304, 1971; Kamble & Pradhan, Fl. Akola 114, 1988; Almeida, Fl. Savantwadi 222, 1990; Kulkarni, Fl. Sindhudurg Dist. 219, 1988; Bole & Almeida, JBNHS 79: 598, 1983; Karthikeyan & Anandkumar, Fl. Yavatmal Dist. 136, 1993; Ugemuge,

Fl. Nagpur Dist. 205, 1986.

Conyza spinidens Miq., Fl. Ind. Bat. 44, 1855.

Conyza diffusa Roxb., Fl. Ind. 3: 429, 1832.

Mharbir (Karthikeyan & Anandkumar)..

Annual; stem 0.6-1.2 m high, stout, striate, more or less glandular-pubescent. Leaves thinly membranous, the lower petioled, sometimes reaching 13 by 2 cm (including the somewhat obscure petiole), obovate, or often lyrate or runcinate, acute or obtuse, coarsely and deeply serrate, finely pubescent on both sides, base running down like a wing into the petiole. Heads numerous, small, about 4 mm in diam., on slender glandular-hairy peduncles, in much-branched open panicles. Involucre bracts glandular-pubescent, the outer much the shorter, lanceolate, spreading, the inner linear, acute. Pappus white. Achenes ribbed.

Flowers: July-December.

Distribution: Khandala!, Bonvalil, Mahabaleshwar!, Madh!, Mumbra!, Tungar!, Bassein!,

Kanheri!, Savantwadi (M.R. Almeida -1156, 2624, BNHS), Nanapani, Sakhar-pathar!.

Vidarbha: Manekshahgarh, Wamanpalli, Elgurtola, Keslaghat, Patur, Kalakamtha, Penganga, Kharbi, Koradi.

J.D. Hooker (1881) & Cooke (1904) doubted that this might be only a pubescent and glandular form of *Blumea virens* DC. Recent authors not only accept it to be a separate species, but accept three varieties under this species.

Blumea paniculata (Willd.) DC. var. *gracilis* (Hook.f.) comb. nov.

B. membranacea DC. var. *gracilis* Hook.f., Fl. Brit. Ind. 3: 265, 1881; Naik, Fl. Marathwada 462, 1998.

Erect, slender, much branched herbs, 20-45 cm tall, all parts thinly pubescent. Leaves lanceolate to oblanceolate, 1-6 cm long and 3-15 mm broad, attenuated into a short petiole base, distantly serrate, often lobulate, acute or shortly acuminate. Heads few, 5.7 mm across, on slender axillary or terminal cymose peduncles.

Flowers: November - February.

Distribution: Marathwada: Mahadeo ghat (Nanded District- W. Khan- 509, Marathwada Univ. Herb.)

This variety as well as the variety *muralis* of J.D. Hooker are not recognised by Randeria on the grounds that the characters selected for their segregation are variable and not tenable for the maintenance as separate varieties. I am unable to segregate this variety from the typical. Since the J.D. Hooker's variety *gracilis* based on specimen from Heyne's herbarium has been totally neglected by Randeria in her monographic studies I reluctantly follow Dr. Naik in including this variety here. However, Naik's treatment does not appear taxonomically sound as he has neither seen the original or for that matter any authentic material of this species and he has not given any reasons for accepting his materials as belonging to Hooker's present variety. J.D. Hooker mentions that his material approaches *B. glomerata* DC. [*B. fistulosa* (Roxb.) Kuntze] in habit and may be referable to it, but differs from it in having glabrous receptacles. According to ICBN the applications of names is based on types, therefore the identifications based on paper characters do not serve reliable purpose in taxonomy.

Blumea paniculata (Willd.) DC. var. *jaquemontii* (Randeria) Almeida (comb. nov.)

B. membranacea DC. var. *jaquemontia* Randeria, *Blumea* 10: 271, 1960.

B. jacquemontii Hook. f., Fl. Brit. Ind. 3: 265, 1881; Gamble, Fl. Madras 2: 688, 1921.

Laggera senecioides Benth. & Hook. f., *Genera Pl.* 2: 290, 1862.

B. obovata Clarke, *Comp. Ind.* 72, 1876 (non DC., 1825).

B. membranacea var. *membranacea* sensu Naik, Fl. Marathwada 462, 1998.

B. kingii Clarke ex Hook. f., Fl. Brit. Ind. 3: 265, 1882.

An erect herb, with stout stem, villous with spreading soft hairs. Leaves 3-12 cm long. Lower leaves petioled, obovate-lanceolate, coarsely irregularly serrate. Heads 1 cm across, peduncled, arranged in open panicles on divaricate branches and pedicels. Involucre bracts numerous, subulate-lanceolate, rigid, colored, puberulous. Receptacle pubescent. Achenes 8-10-ribbed, finely silky.

Plants more or less strigose and robust. Heads 7-8 mm in diam. Phyllaries rigid.

Flowers: December-April.

Distribution: Savantwadi (S.M.Almeida- 1407, BLAT), Bombay (Lambert, K).

Marathwada: Sitakund (Nanded).

Description given by Dr. V.N.Naik for the typical variety of this species perfectly fits in here. I am unable to comment on the identity of his variety jacquemontii. Randeria who has examined the type of B.jacquemontii Hook.f. describes the head as 7-8 mm across, whereas Naik's materials seem to have heads 8-12 mm long. These differences warrant a fresh look at the identifications of Marathwada materials. It is easy to list number of differentiating characters as listed by Naik & Bhogaonkar (Acta Bot. Ind. 20(1): 46, 1992), if the identification itself is wrong.

Blumea paniculata (Willd.) DC. var. **muralis** (Hook f.) Almeida (comb.nov.)

B. membranacea DC var. **muralis** (DC.) Hook f., Fl. Brit. Ind. 3:265, 1881; Cooke, Fl. Pres. Bombay 2: 21, 1904; Naik, Fl. Marathwada 463, 1998.

B. muralis DC., Prodr. 5: 440, 1825; Dalz. & Gibs., Bombay Fl. 125, 1861.

Glandular hairy. Leaves very tender, elliptic, ovate or lanceolate, the lower often lyrate or pinnatifid, toothed or serrulate, very membranous.

Flowers: December - January.

Distribution: Borivali.

Marathwada: Aurangabad, Nanded, Soygaon.

According to Randeria character of bulbous based hairs is a variable character in this species.

Blumea sessiliflora Decaisne, Nouv. Ann. Mus. Paris 3: 140, 1834; Randeria, Blumea 10: 257, 1960; Almeida in Assessment of Threatened Pl. Ind. 185, 1983 & in Fl. Savantwadi 223, 1990.

B. fasciculata DC., Prodr. 5: 442, 1836; Clarke, Comp. Ind. 81, 1876.

B. glomerata Hook. f., Fl. Brit. Ind. 3:262, 1881 (non DC., 1830); Cooke, Fl. Pres. Bombay 2: 20, 1904; Dalz. & Gib., Bombay Fl. 125, 1861; Woodrow in JBNHS 11: 148, 1898.

Conyza stachyoides Spr. ex DC., Prodr. 5: 442, 1836.

Bhambhurda.

Herb, 1 m tall. Stem terete, tomentose in upper parts. Leaves sessile, 4-15 cm long and 1.5-6 cm broad. Oblanceolate, the lower usually lyrate-lobed; apex apiculate, margins serrate-dentate, base tapering. Heads in clusters of 3-5, in spiciform panicles, 6 mm long. Phyllaries slightly longer than florets, 1.5-6 mm long, lanceolate, acuminate, margins scarious. Corolla yellow; those of bisexual florets 4-5 mm long with triangular lobes, with unicellular hairs; those of female florets 3-4 mm long, 2-3 lobed. Anthers tailed. Achenes brown, oblong, ribbed. Pappus white.

Flowers: December - February.

Distribution: Amboli, Savantwadi (S.M. Almeida - 1108, 4586, 4699, BLAT), Charatha (M.R. Almeida - 185, 220, BLAT).

Blumea sinuata (Lour.) Merrill in Trans. Amer. Phil. Soc. 24: 385, 1935; Singh, Bull. Bot. Surv. Ind. 18: 216, 1979; Naik, Fl. Marathwada 465, 1998.

Gnaphalium sinuatum Lour., Fl. Cochinch 947, 1790.

B. laciniata (Roxb.) DC., Prodr. 5: 436, 1825; Hook f., Fl. Brit. Ind. 3:264, 1881; Randeria, Blumea 10: 258, 1960; Kamble & Pradhan, Fl. Akola 113, 1988; Almeida, Fl. Savantwadi 221, 1990; Cooke, Fl. Pres. Bombay 2: 23, 1904.

Conyza laciniata Roxb., Fl. Ind. 427, 1832.

B. lacera (Burm. f.) DC. var. **blumei** DC., Prodr. 5:436, 1825; Koster in Blumea 20: 223, 1972.

Blumea aculeata DC., Nouv. Ann. Mus. Paris 3: 409, 1834.

Annual herb, 30-50 cm tall, hairy. Stems upto 1 cm thick. Leaves 2.5-10 cm long and 0.5-6.5 cm broad, pinnatifid, appressed, hairy. Heads 0.6-1.3 cm across in terminal and axillary panicles. Receptacles 2.5-5 mm across. Achenes ribbed, brown, sparsely pubescent. Pappus white.

Flowers: December - May.

Distribution: Danoli, Otavane (M.R. Almeida - 2283, BLAT).

Marathwada: Osmanabad, Sitakhandi, Tururi, Ambajogaie.

Vidarbha: Nagpur, Chikhalwal, Karla, Morna.

Endemic to India.

Blumea solidaginoides (Poir) DC., Prodr. 5: 443, 1836; Randeria, Blumea 10(1): 298, 1960 (as *unid.*); Malhotra & Moorthy, BOBSI 13: 304, 1971; Almeida, Fl. Savantwadi 223, 1990; Kulkarni, Fl. Sindhudurg Dist. 220, 1988; Naik, Fl. Marathwada 465, 1998.

Gnaphalium solidaginoides Poir., Encyclop. suppl. 2: 825, 1811.

B. holosericea Dalz. & Gibs., Bombay Fl. 125, 1861 (non DC. 1836).

Erigeron molle D. Don, Prodr. 172, 1825.

B. mollis (Don) Merrill in Philip. Journ. Sci. Bot. 5: 395, 1910; Randeria, Blumea 10: 261, 1960; Kamble & Pradhan, Fl. Akola 114, 1988; Bole & Almeida, JBNHS 79: 598, 1983; Ugemuge, Fl. Nagpur Dist. 205, 1986.

B. wightiana DC., in Wight Contr. 14, 1834; Clarke, Comp. Ind. 74, 1876; Hook. f., Fl. Brit. Ind. 3: 261, 1881; Woodrow in JBNHS 11: 648, 1898; Cooke, Fl. Pres. Bombay 2: 19, 1904.

B. neilgherrensis Hook. f., Fl. Brit. Ind. 3: 261, 1881; Gamble, Fl. Madras 2: 686, 1921.

Conyza bifoliata DC., Prodr. 5: 435, 1836.

Erigeron glomeratus Spr. in DC., Prodr. 4: 437, 1836 (non Salisb., 1791).

"Nan-patsja" Rheede, Hort. Mal. 10: 123, t. 62, 1690.

Stem erect, branched, 15-75 cm high; branches terete, villous. Leaves 3-10 by 2-5 cm, elliptic-lanceolate, or obovate, the lower petioled, the upper nearly sessile, irregularly toothed or serrate. Heads 0.5 cm in diam, collected into terminal spiciform dense (rarely open) often interrupted cymes or panicles; flowers purple. Involucre bracts narrowly linear, acuminate, the outer hairy. Receptacle glabrous. Anthers subincluded, caudate at the base. Corollas of flowers with glandular lobes. Pappus shorter than the involucre bracts. Achenes minute, oblong, 4-5-angled, not ribbed.

Flowers: November-February (March).

Distribution: Pune!, Madh!, Purandhar!, Uran!, Sinhadga!, Tungar!, Goregaon!, Nanaj!, Tilari (M.R. Almeida -2208, BLAT), Amboli (M.R. Almeida -214, BNHS), Bhedsi, Kankauli, Kudal, Ghotge, Ramghat!, Mahabaleshwar!.

Marathwada: Osmanabad, Kinwat, Papnas, Daulatabad.

Vidarbha: Warsa, Dhanora, Nagpur, Kalakamtha, Karla, Mahan., Ramtek.

Blumea venkatramanji Rao & Hem., Curr. Sci 42: 693-4, 1973; Rao et al, Fl. Ind. Enum. Aster. 19, 1988.

Erect annual herb, 0.2-1 meter high, aromatic. root solitary or 2-10 in number. Stem terete, striate, clothed by simple, gland-tipped and eglandular hairs. Lower leaves larger sometimes upto 20 cm long and 5 cm broad, spatulate, hairy on both surfaces, hairs tubercled based, both simple and gland-tipped, upper surface scabrid at maturity; lamina elliptic-obovate or oblanceolate in outline, narrowed at the base, decurrent and fused with the stem thus forming a false, prominently winged stem, margins irregularly dentate or serrate with pointed apices. The uppermost leaves smaller, oblong-lanceolate or spatulate with decurrent bases. Inflorescence terminal and lateral, pedunculate, solitary or in clustered heads, heads 0.6-1.2 cm long and about 1 cm broad, involucral bracts 3 to 4-seriate, outer 2 whorls green, 2-4 mm long, lanceolate, inner ones scarious with greenish midrib, 4-6 mm long, all linear and tinged with purple at apex, outer surface clothed by bulbous-based glandular and eglandular hairs; receptacle hemispheric, glabrous. Outer florets in about 5 rows; corolla yellow, about 3 mm long, upto 1 mm broad at the mouth, female, lobes 3, minutely glandular along margins together with a few hyaline hairs; style longer than the corolla tube, stigmata 2; pappus about 6 in number, white, as long as the corolla tube and antrorsely, minutely barbellate, caducous at maturity. Disc florets bisexual, corolla yellow, 4 mm long, about 1 mm broad at the apex, lobes 5, clothed by glandular and eglandular hairs, tube glabrous, stamens 5, syngeneicous, 2.5 mm long; protruding out of the tube at maturity, anthers tailed; style about 4 mm long; stigmata 2, about 1 mm long. Ovary hairy, columnar, 0.6 mm long, pappus as long as the corolla, about 6 in number, white, antrorsely barbellate, caducous at maturity. Achenes minute, 1 mm long and about 0.2 mm broad, subcylindrical or 4-sided, minutely, sparsely hairy, somewhat cupular at apex.

Flowers: December - February.

Distribution: Holotype: Vadgaon- Poona: Hemadri -118174A, BSI; Ralegaon, Waghewadi.

This is very much like *B. obliqua* (L.) Druce and may be it is the variety *maritima* described by J.D. Hooker in Flora of British India. Randeria, although has not dealt with variety *maritima* of J.D. Hooker, has merged all the varieties with typical variety. Cooke emphasises on the significance of extra height of var. *maritima* in comparison with the typical variety. Variety *maritima*, however, is a coastal plant and recorded only from Andaman Islands and from Sundarbans.